



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,767	10/12/2005	Jeroen Anton John Leijten	NL030384	2219
24737	7590	10/09/2007	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			HUISMAN, DAVID J	
P.O. BOX 3001			ART UNIT	PAPER NUMBER
BRIARCLIFF MANOR, NY 10510			2183	
MAIL DATE		DELIVERY MODE		
10/09/2007		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/552,767	LEIJTEN, JEROEN ANTON JOHN
Examiner	Art Unit	
David J. Huisman	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 12 October 2005.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-8 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-8 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 12 October 2005 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/12/2005

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_ .

5)  Notice of Informal Patent Application

6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

1. Claims 1-8 have been examined.

### ***Papers Submitted***

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Authorization for Extension of Time for All Replies, IDS, Certified Copy of Foreign Priority Application as received n 10/12/2007, and Documents submitted with 371 Application as received on 11/4/2006.

### ***Specification***

3. The abstract of the disclosure is objected to because all occurrences of “timestationary” should be replaced with --time-stationary-- for consistency. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities:
  - On page 8, line 19, should “111” be replaced with --215--?Appropriate correction is required.

### ***Drawings***

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- Regarding Fig.2, the examiner has been unable to find reference number “215” in the specification. By overcoming the specification objection above, as indicated by the examiner, applicant will also overcome the drawing objection

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### *Claim Objections*

6. Claim 4 is objected to because the examiner feels that its dependency is incorrect. That is, claim 4 is currently dependent on claim 1, but there is a lack of antecedent basis for “the first identifier”. If claim 4 were dependent on claim 3, however, this problem would not exist. Consequently, please amend claim 4 to be dependent on claim 3 (such dependency will be assumed by the examiner). Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Karp et al., U.S. Patent No. 5,748,936 (herein referred to as Karp).

9. Referring to claim 1, Karp has taught a time-stationary processor arranged for execution of a program, the processor comprising:

a) a plurality of execution units. See Fig.2, components 30.

b) a register file accessible by the execution units. See Fig.2, components 32, and column 5, lines 7-8. Note that one register file may exist, or multiple register files may exist, where in the case of multiple register files, each would be a sub-file making up an overall register file.

c) a communication network for coupling the execution units and the register file. See Fig.2.

Clearly, execution units must be coupled to the register file(s).

d) a controller arranged for controlling the processor based on control information derived from the program, characterized in that the processor is further arranged to dynamically control the transfer of result data from an execution unit of the plurality of execution units to the register file, based on the control information. See Fig.5 and column 10, lines 1-60. Note that result writing is based on predicate, poison bit, and exception information.

10. Referring to claim 2, Karp has taught a processor according to claim 1, characterized in that the control information comprises a first identifier on the validity of an operation, and

wherein the processor is arranged to dynamically control writing of result data corresponding to the operation into the register file, based on the first identifier. See column 10, lines 1-21, and Fig.5, step 202. Essentially, at any point before results are to be written, if it is determined that a predicate is false and that an instruction should not modify the state of the system, result data is not written to the register file. If the predicate is true, then result data could be written to the register file if other factors are satisfied.

11. Referring to claim 3, Karp has taught a processor according to claim 2, characterized in that the first identifier is delayed according to the pipeline of the corresponding execution unit arranged for executing the operation. See column 10, lines 16-21.

12. Referring to claim 4, Karp has taught a processor according to claim 1, characterized in that the execution unit is arranged to produce a second identifier on the validity of an output result of a corresponding output port of the execution unit, and wherein the processor is further arranged to dynamically control writing of result data corresponding to the operation into the register file, based on both the first identifier and the second identifier. See Fig.5, step 212, and column 10, lines 58-60. Note that a second identifier (an exception identifier) identifies whether an exception has occurred for a given instruction, i.e., whether that instruction has erred in some manner. If an exception occurs, then results are not written. Results are written if an exception does not occur.

13. Referring to claim 5, Karp has taught a processor according to claim 4, characterized in that the processor is further arranged to dynamically control writing of result data corresponding to the operation into the register file, based on the first identifier, the second identifier and an input datum. See Fig.5, and note that each of the first identifier (predicate), the second identifier

(exception), and an input datum (either poison bit shown in Fig.5, step 208, or the result itself, which is an input to the register file) plays a role in controlling writing to the register file.

14. Referring to claim 6, Karp has taught a processor according to claim 1, characterized in that the register file is a distributed register file. See Fig.2 and note that a register file is divided into multiple sub-register files 32) which are distributed throughout the system for use by the execution units.

15. Referring to claim 8, claim 8 is rejected for the same reasons set forth in the rejection of claim 1 above.

#### *Claim Rejections - 35 USC § 103*

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karp.

18. Referring to claim 7, Karp has taught a processor according to claim 1. Karp has not explicitly taught that the communication network is a partially connected communication network. However, Official Notice is taken that partially connected communication networks, and their advantages, are well known and accepted in the art. A partial network is where at least one execution unit is coupled to less than N register files. One example would be where integer circuitry is couple to an integer register file and floating-point circuitry is connected to a floating-point register file. Since, integer circuitry does not operate of floating-point numbers or

write floating-point numbers, then the integer unit does not have to be coupled to the floating-point register file. Clearly, by requiring less wiring than a fully connected network, the partial network is less expensive in terms of silicon. As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Karp such that the communication network is a partially connected communication network.

### *Conclusion*

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

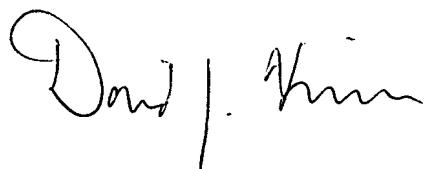
Branigin, U.S. Patent No. 5,471,593, has taught conditional result writing based on a predicate associated with the result-producing instruction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Huisman whose telephone number is (571) 272-4168. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJH  
David J. Huisman  
September 20, 2007

A handwritten signature in black ink, appearing to read "David J. Huisman". The signature is fluid and cursive, with "David" and "J." on the first line and "Huisman" on the second line.